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The Blackboard Learning System

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Abstract

Blackboard LLC was founded in 1997 by two education advisors, Matthew Pittinsky and Michael Chasen, as a consulting firm to provide technical standards for online learning applications. Blackboard LLC was contracted to the IMS Global Learning Consortium, a worldwide non-profit organization within the National Learning Infrastructure Initiative of Educause. Blackboard's vision was to provide a user-friendly means by which college professors could put course information, including syllabi, reference sites, and study guides, on the Web. In 1998, Blackboard merged with CourseInfo LLC, a course management software provider and start up company at Cornell University, and the merged company soon released their first software product for online learning. Blackboard's continued growth and the expanding public profile was driven by acquisitions. In March 2000, Blackboard Inc. acquired the Richmond-base competitor MadDuck Technologies.

In January 2001, Blackboard purchased CampusWide Access Solutions Inc. from AT&T and CEI SpecialTeams from iCollege Inc. In 2002, another online learning competitor, Promethius, was purchased from George Washington University, and then in 2003, the assets of the transaction system company, SA Cash, were acquired. Finally, Blackboard released plans to raise up to $75 2 million in an initial stock offering and went public in June 2004.

Since then, Blackboard Inc. merged with the rival e-learning software company WebCT and together it is estimated they control up to 80 percent of the academic course management system market in North America.

Blackboard is used by more than 70 percent of the U.S. colleges and universities named to the Forbes.com Most Connected Campuses' List.

Blackboard Portfolio of Products

Blackboard Inc. offers two comprehensive product lines which are termed the Networked Transaction Environment (NTE) and the Networked Learning Environment (LE). [2, 3] The NTE product is the Blackboard Commerce Suite which contains the Blackboard Transaction System, the Blackboard Community System and Bb One.

The Blackboard Commerce Suite provides software for the establishment and functioning of universal financial and data accounts for students, faculty, and other members of the campus community, enabling clients to track commerce and access transactions on campus, off campus, and online within a one-card program. The NLE product is the Blackboard Academic Suite which contains the Blackboard Learning System, the Blackboard Community System and the Blackboard Content System. This single platform integrates data and applications for e-learning. The Blackboard Learning System is the heart of the NLE and it enables instructors to create and manage course matter, employ publisher content, communicate with students, and evaluate performance.

Benefits of the Blackboard Learning

System Students and faculty may benefit from course management systems such as the Blackboard Learning System. Potential benefits include:

(1) increased availability, (2) quick feedback, (3) improved communication,

(4) tracking, (5) skill building.

1. Increased Availability-

Blackboard can be accessed from the internet at anytime and anywhere. Students can retrieve all of their course materials including assignments, lecture notes, slides, internet hyperlinks, and audio/visual aides. They can submit their assignments as soon as they are complete. It is this accessibility that most appeals to students. In a 2004 survey conducted by Duke University, students were presented with a list of 10 Blackboard functions. The students were asked to select those functions that were most useful to them. The number one choice for 85% of students was "éasy access to course materials and readings." (4] In 2005, Bowdoin College in Maine conducted a Blackboard Pilot Study of students in web-enhanced courses using Blackboard. Of the students who responded, 61% indicated that Blackboard was most helpful "in terms of increasing my access to course materials." I5] Availability is paramount for students.

2. Quick Feedback-

There are two principal types of feedback provided to students via Blackboard: faculty-initiated feedback and automated feedback. Instant grading, and therefore instant feedback, can be -provided when using Blackboard's Test Manager Function for quizzes and exams. If the instructor selects the appropriate feedback options, students can take their tests and have all objective-based questions graded and scores available immediately after they submit their responses. Even if there are essay questions on tests, which must be graded individually, students can see sample answers and thus have a good idea of their outcome on the test. Students can submit their homework assignments from anywhere and see if the assignments they have submitted have been graded. Using the Blackboard Gradebook, assignments can be returned to the students and grades can be viewed confidentially. Faculty using Blackboard can also get instant feedback through the Blackboard's Survey option which allows students to respond immediately and anonymously to multiple choice or true-false questions about the class.

3. Improved Communication-

There are several features of Blackboard that allow for communications with students. Four of the more distinctive options are announcements, discussions, virtual classroom, and email. The announcement function is available to students immediately after log on in the Blackboard system. This assures that all students are current and this minimizes administrative work for faculty.

As for the discussion function, the literature indicates that asynchronous discussion within course management systems develops collegiality among students and provides a means of support for students. [6] The Blackboard option, termed Post a Question, encourages students to respond to fellow students' questions and allows instructor surveillance. The virtual classroom is a synchronous environment which supports text-based chat and allows live interaction among participants. The email option within Blackboard is very flexible. Each student's email address can be stored within the student's profile area. Blackboard provides the ability to send email to individual students, to groups of students, or to all students.

4. Tracking-

Blackboard tracks student usage of courses and posts these results in the course statistics area. Instructors can obtain statistics on all students or individual students within the course. Individual assignments can

also be tracked. Date and time stamps are included in the Last Submitted / Modified section of the submitted assignment, allowing for easy identification of late assignments. Students can also track their own progress by viewing the Gradebook.

5. Skill Building-

There are several additional skills that are promoted with the use of Blackboard.

These skills include organization and time management, which go hand-in-hand in helping students carry out their assignments efficiently. Blackboard provides the ability to include a calendar for each course in which a student is enrolled, thus optimizing students' efforts to match course expectations. Current entries for each course are displayed in the Welcome area that the student sees after login. All documents posted by the instructor can provide start and end dates and times. The use of these dates and times for all documents, including tests and assignments, encourages students to use their time wisely. Likewise, checking the Course Calendar or the Gradebook, where all assignments are listed, allows the student to allocate time efficiently. 4 In summary, course management systems like the Blackboard Learning System are beneficial to student learning. Donna Patterson, Associate Administrator of Technology at Valparaiso University School of Law, summarized a survey in her paper encouraging faculty to use technology in teaching and stated the point well

Drawbacks of the Blackboard Learning System-

Some of the drawbacks or limitations associated with the Blackboard Learning System include: (1) the software is harder to learn than expected,

(2) certain options may be restricted to specific operating systems, (3) there are inefficiencies in bandwidth use when materials have to be downloaded every time access is sought, and (4) cost.

1. Blackboard is Hard to Learn.-

A survey of 730 faculty, staff and students in the University of Wisconsin System, the majority of whom use Blackboard, found that course management systems are harder to learn to use than expected. [9] The survey represented 10 percent of the total faculty and half of those using course management systems.

Faculty members found course management systems "time-consuming and inflexible." The study also found that despite expectations, many students were not proficient with the technology. A separate study, an evaluation of Blackboard as a platform for distance education delivery at Hampton University School of Nursing, found that the internet is often a new learning environment for those returning to University for graduate degrees. [10] These non-traditional students are often older and less experienced with campus computational instruction tools than are resident students and find working with the online Blackboard Learning System difficult. Furthermore, an independent survey of U.S. university websites shows that most have web pages dedicated to address common Blackboard problems and to provide means of trouble-shooting. Although promoted as an easy-to-use system, there is a learning curve for Blackboard that precludes full and timely utility.

2. Blackboard Options May Be Restricted to Particular Operating Systems-

As reported on dailyprincetonian.com, initial announce-ments by Blackboard Inc. in 2001 were that new versions of its software would provide additional features only to those running Blackboard on Microsoft NT servers. (11] This bundling of individual programs and applications within specific operating systems has been maligned over and over by innumerable critics. Still others find that Blackboard limits creativity, technologically speaking, by confining instruction to a restricted format. Stephen Arnold, a college instructor and Gentoo Linux developer, promotes open-source tools rather than fixed platforms for

supporting classroom instruction, saying "It (open-source tools) gives me the freedom to try almost anything that comes to mind."

3. Blackboard System Inefficiencies-

Chris Thomas, chief strategist for Intel, is an advocate of mobilized technology and a critic of portal-based systems like Blackboard. Richard Culatta's blog summarized Thomas' reasons to mobilize to open-source technologies in which it is noted that there are significant costs and technological impacts of wasting bandwidth with portal-based systems like Blackboard, particularly when materials must be downloaded in order to view them. [13] Dependence on server portal solutions is always subject to network problems. When information is sent directly to mobile devices, there is no system to crash.

According to Thomas, the adherence to portal-based systems like Blackboard is, in essence, teaching students with archaic technology.

4. Cost-

Spending on information technology by colleges and universities is expected to set a record in the 2005-2006 academic year. According to the American Council on Education, costs associated with higher educational telecommunications this past year are estimated to be $7 billion dollars, a 35 percent increase from the prior year. These costs primarily reflect prices charged by outside internet service providers and course management system providers like Blackboard. According to Blackboard executives, costs for their network environment products, including Blackboard Learning System, may start low but as subscribers integrate more functions into Blackboard, subscription licenses may be $200,000 to $400,000-a-year.

Applications of the Blackboard Learning System in Higher Education-

Distance Learning: Blackboard and the online learner According to Dr. Curtis

J. Bonk, professor of Instructional Systems Technology at Indiana University and recipient of the Most Outstanding Achievement Award from the U.S.

Distance Learning Association, there are four different types of learners which he defines as R2D2, for "read, reflect, display, and do." [15] The first type of learner is the reader. This student is the auditory and verbal learner who prefers words, written language and spoken explanations. The Blackboard Learning System allows the instructor to easily meet the needs of the reader students. Lecture notes, audio recordings, animations, learning activities, case studies and video clips are easily added to the Blackboard system. These resources may be developed by the instructor or very commonly through the editor's supplemental online material. Most editors provide the course cartridge download key and either the instructor or the Blackboard administrator enters the key under "control panel: import course cartridge." In the Blackboard Learning System, materials in the educational publishers' course supplements contain additional resources to reinforce lecture notes and postings to the discussion board. The fourth type of learner is one that learns best from doing.

This student is the tactile or kinesthetic learner.

Seven Principles of Effective Teaching-

A practical lens for evaluating online courses [16] The Blackboard Learning System allows the instructor to accomplish effective online teaching principles.

These principles are outlined here and common examples are cited.

Principle 1: Good practice encourages student-faculty contact - Instructors should provide clear guidelines for interaction with students.

Principle 2: Good practice encourages cooperation among students - Well-designed discussion assignments facilitate meaningful cooperation among students.
Principle 3: Good practice encourages active learning - Students should present course projects
Principle 4: Good practice gives prompt feedback - Instructors need to provide two types of feedback: information feedback and acknowledgment feedback.
Principle 5: Good practice emphasizes time on task - Online courses need deadlines.
Principle 6: Good practice communicates high expectations - Challenging tasks, sample cases, and praise for quality work communicate high expectations.
Principle 7: Good practice respects diverse talents and ways of learning - Allowing students to choose project topics incorporates diverse views into online courses.

Incorporation of Blackboard in the teaching of hybrid courses:

Blackboard is as easily incorporated into hybrid courses as it is in all web-based distance learning. The benefits of increased availability, access to the internet anytime and anywhere, quick feedback, improved communication, tracking, and skill building are applicable as a supplement to classroom instruction in hybrid courses as they are to solely web-based instruction. These teaching strategies may be implemented in ways that take into account the array of learning styles present in any student cohort to meet individualized student needs. Blackboard enables immediate access to students and student-generated data. Access to this data enhances instructional capability beyond what is realized in the traditional classroom and facilitates the formative evaluation of courses and students to enhance instruction and learning. At any time during a course, progress of a student or student cohort may be assessed. This is accomplished by reviewing student usage of course 9 material, grades on assignments, testing, and one-to-one communication between faculty and students. As an instructional supplement, Blackboard has been embraced positively by students. The creative use of web-based platforms such as Blackboard by faculty to develop hybrid courses should strive towards incorporating Blackboard in a seamless way into the classroom. This creativity is boundless and is limited only by the ability of the user. As stated earlier in this paper, one drawback or limitation of the Blackboard Learning System is the belief that " the software is harder to learn than expected." This sentiment is expressed by faculty and students. It is worth noting that Blackboard provides web-based instruction in explicit detail in Behind the Blackboard which is accessible to faculty and students in instructional and student versions. Behind the Blackboard is accessed through the Blackboard website.

Blackboard as a supplement to other digital environment learning systems:

The Blackboard Learning System can also be used as a supplement to classroom learning even when other digital environment learning systems are the primary instructional tools. A case in point is upper level, higher educational settings in which instructors and students meet face-to-face in traditional classrooms and in which curricular content and additional core instructional material are delivered directly to students' laptops via digital environmental systems, for example via the VitalSource Technologies learning system. Even in this environment, Blackboard may be used as a supplemental technology.

Conclusions

Most university and college classrooms now provide rich computer, network and multimedia capabilities for instruction. The benefits of these systems include not only access to a diverse means of didactic presentation but also the means for creation of motivational environments for learning.

Course management systems or learning management systems provide software for the management and

delivery of learning content and resources to students. These systems have become an essential component of computer-based instructional capability. The Blackboard Learning System has emerged as the dominant course management system, largely by its Wall Street-style acquisition of complementary component companies and through buy-out mergers with their nearest market competitors. Blackboard has now expanded into more academic domains as part of a total networked learning environment and as an accompaniment to campus and community-wide networked transaction environments.

The Blackboard Learning System has found a home in distance learning with university and college courses taken totally online, but also as a complement to more traditional instruction in hybrid courses and courses in which other digital environment learning systems may be the primary means of instruction. What lies in the future for Blackboard and other course management systems? It is likely that instruction will become less course-centric and more knowledge-centric. Open-source software for instruction and learning will become increasingly available. The technology will undoubtedly become less of a goal in learning and more of a tool. The systems will evolve to allow students to progress at their own rates with instructors serving as guides for the learning process. Motivation of students in the online learning environment will show benefits in a skilled and knowledgeable society.

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